



Science Data Archival

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Science Data Archival Description



Overview

The data archival scenarios describe the insertion of data into a data server and the sequence of events that occur during nominal and fault (metadata validation and archive storage) processing. This process is largely automated with validation errors being manually processed by the Data Specialist. Data and associated metadata can be received from numerous sources including the ingest, planning, processing, management, and client subsystems. The DAAC Ingest / Distribution Technician (DIT/DDT) is responsible for monitoring the status of all ongoing requests. They respond to alerts that are automatically generated by archive processing, using data server monitoring tools and MSS event log browsing tools. Workflows for operations activities associated with generic request tracking, archive log analysis, subscription viewing, and archive storage failure are shown.

Assumptions

- The data archival processes are started via MSS life-cycle services.
- The system is operating in nominal (operational) mode, with all equipment operational.

Science Data Archival Description



Scenario

- The DIT/DDT monitors ongoing archival activities.
- The DIT/DDT and the DAAC Archive Manager (DAM) analyze the archive log for both nominal and fault processing.
- The DIT/DDT and DAM views subscriptions.

604 Heritage

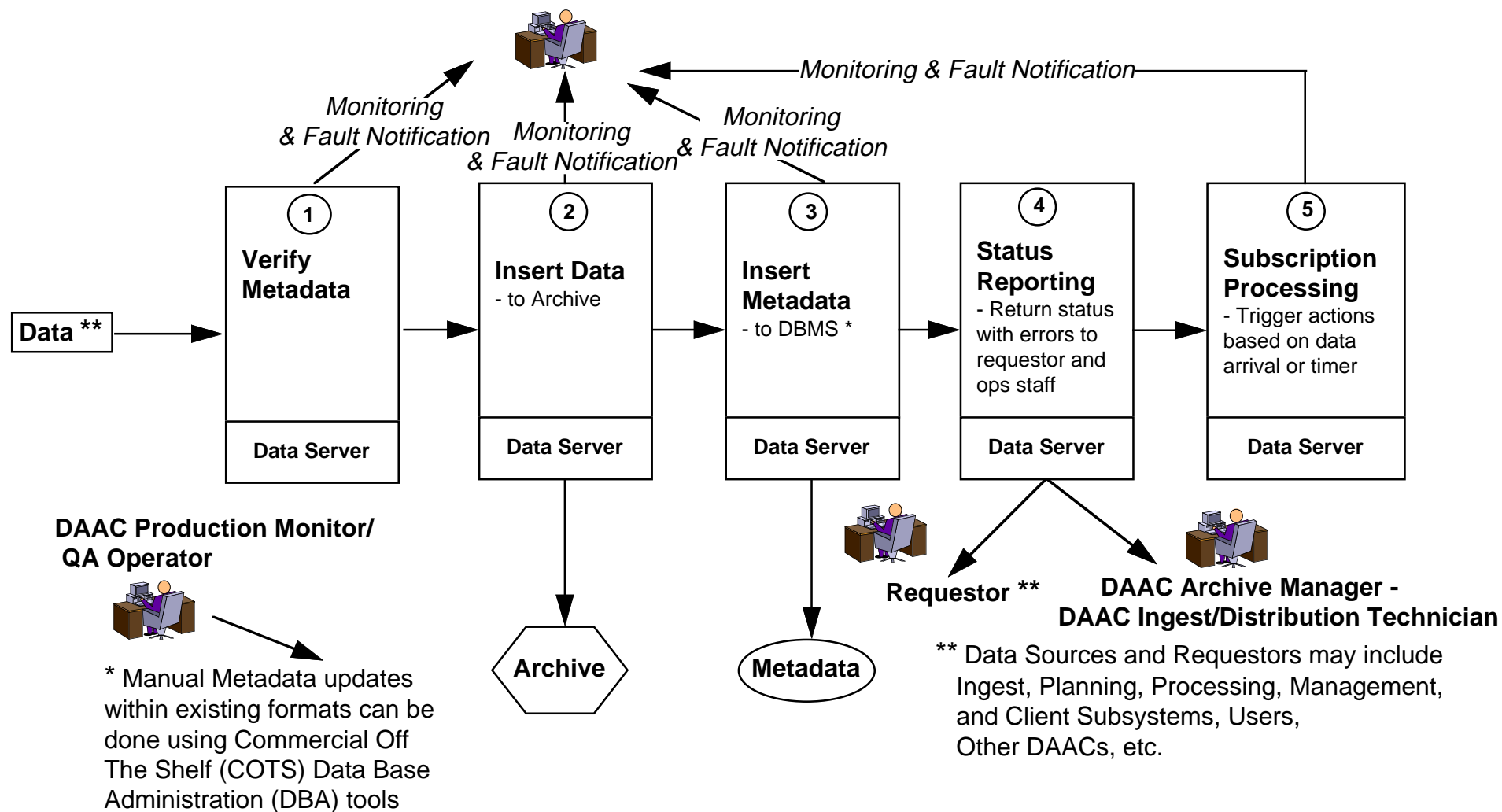
- Operations Concept for the ECS Project: Part 2B - ECS Release B 604-CD-002-002 (Science Data Archival Activities Scenarios)

Archive Data Insertion Activities

Functional Flow



DAAC Archive Manager - DAAC Ingest/Distribution Technician



Archive Data Insertion Activities

Points of View



DAAC Ingest/Distribution
Technician

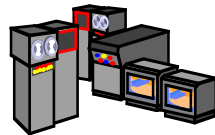


DAAC Operations View

Science Data Server GUI is used to get information about queued requests from a Science Data Server.

Examine alert and coordinate fixes.

Science Data Server GUI is used to get information about queued requests from a Science Data Server.



ECS System

① Science Data Server receives a Data Insert Request. Metadata Validation is successful. The Science Data Server sends a Data Storage Request to Storage Management and the metadata is stored.

③ Storage Management loads metadata and update file into the metadata database, and status is logged

DAAC Archive Manager



DAAC Operation View

Review alert and associated status and faults.

SMC Resource Controller



SMC Operations View

Monitors/reviews system-wide errors/faults for systematic trends and impacts

Archive Data Insertion Activities

Points of View



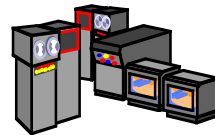
DAAC Ingest/Distribution Technician



DAAC Operations View

Science Data Server GUI is used to get information about queued requests from a Science Data Server.

Science Data Server GUI is used to review list of subscriptions.



ECS System

④

The Science Data Server Logs completion of the Data Insert Request and reports completion of the Data Insert Request.

⑤

The Science Data Server examines the event list for all subscriptions for that event. Subscription notifications are sent to the requestor.

DAAC Archive Manager



DAAC Operation View

Review alert and associated status and faults.

SMC Resource Controller



SMC Operations View

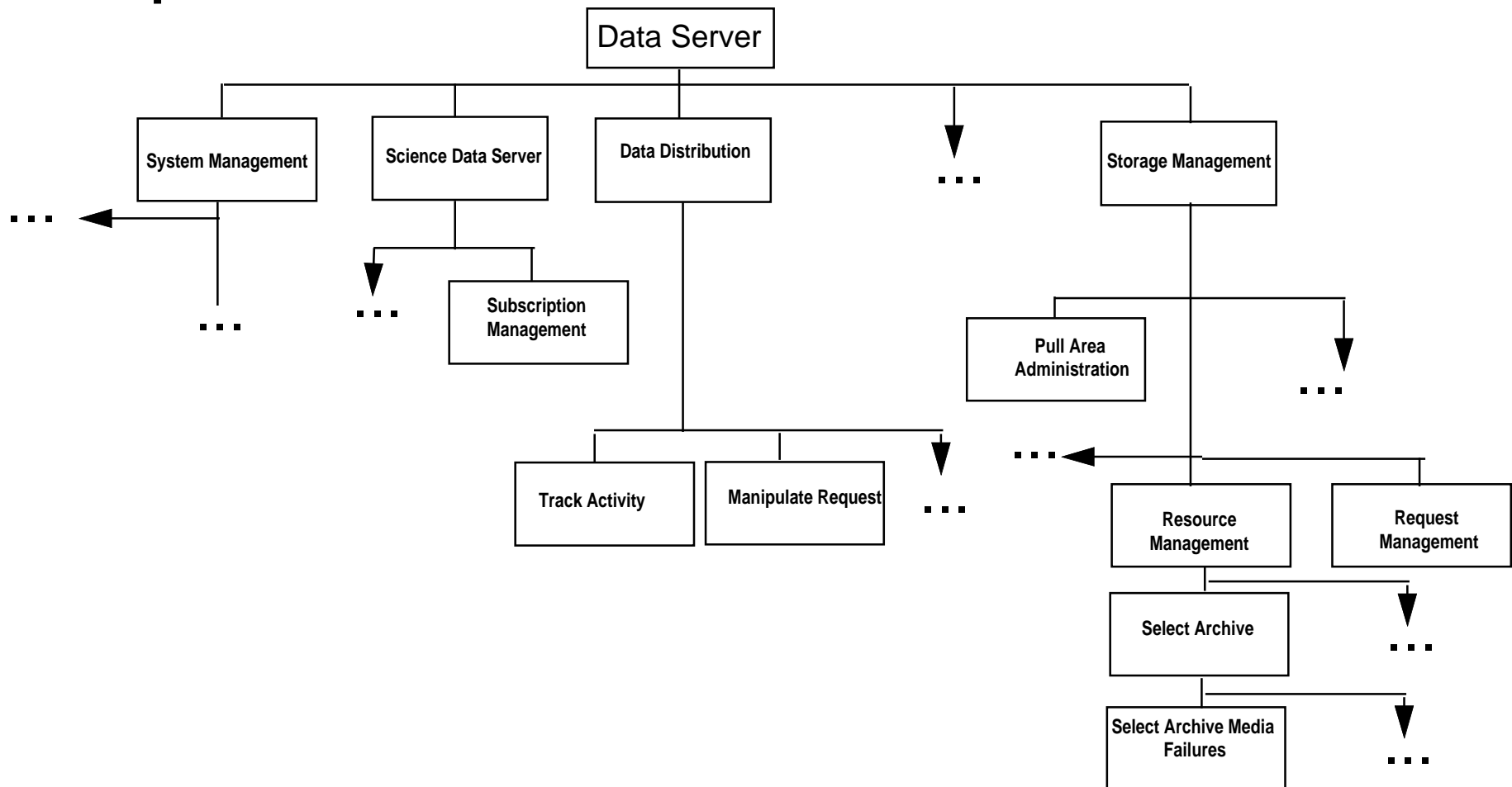
Monitors/reviews system-wide errors/faults for systematic trends and impacts.

Data Server Workflow

(Data Archival, Data Distribution, & Request Segmentation)



Top Level Workflow

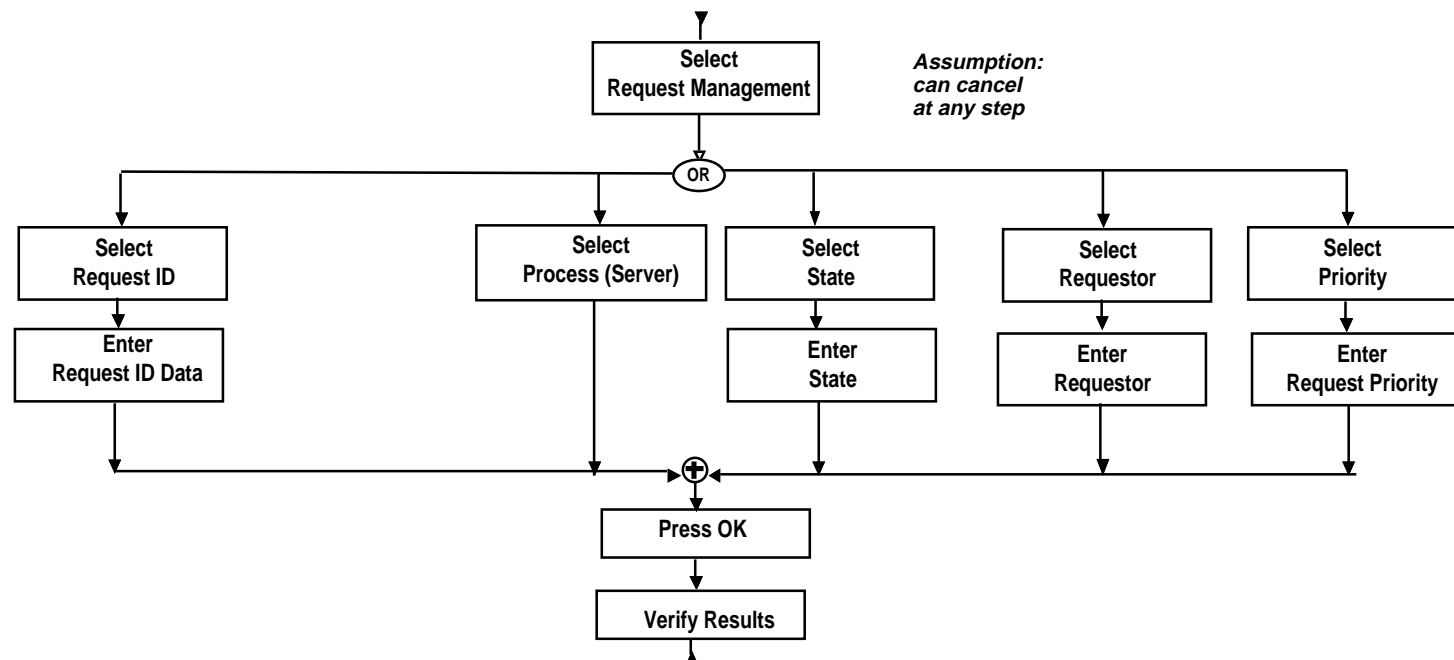




Science Data Archive Workflow

Activity - Generic Request Tracking
Role - DAAC Ingest/Distribution
Technician

Data Server Storage Management





Science Data Archive - Data Activity

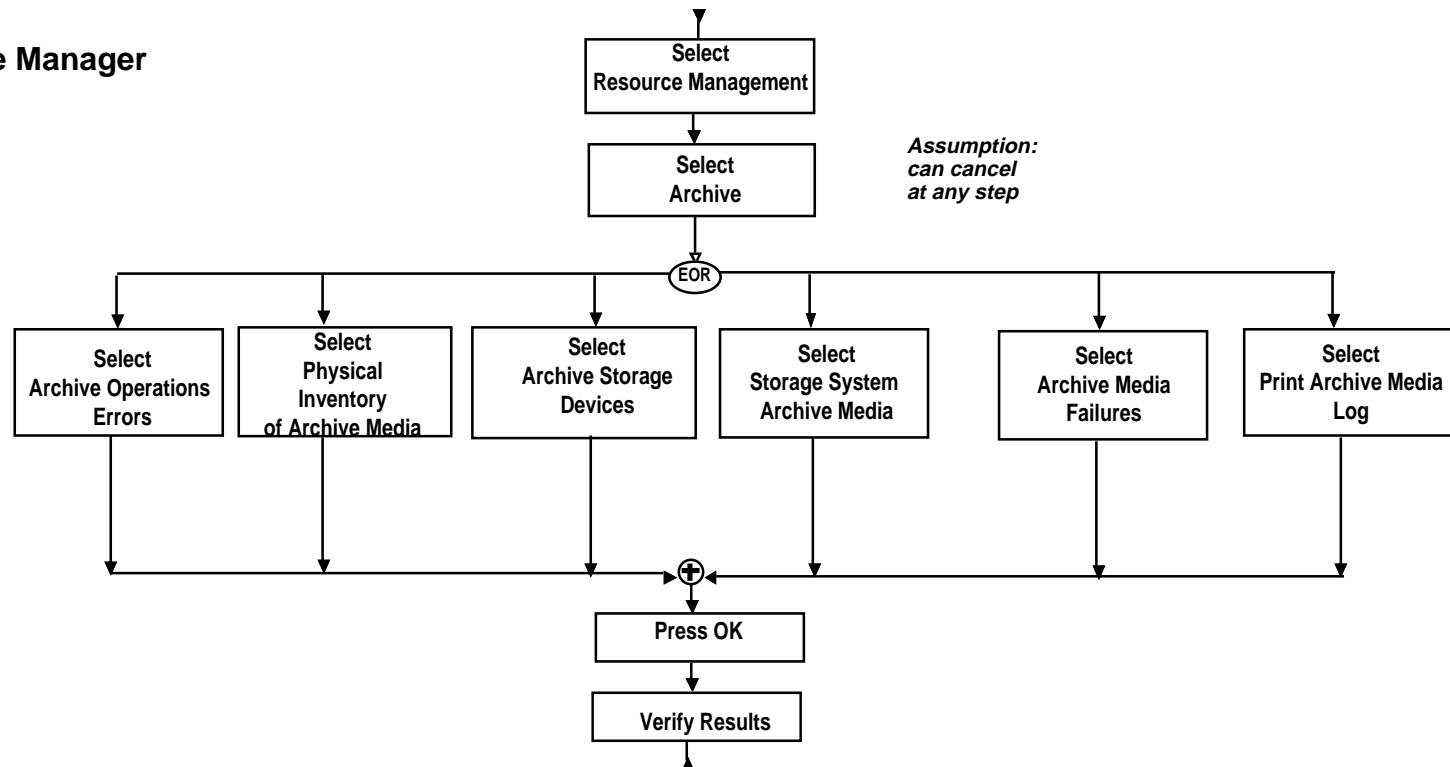
Archive Operator Function	Data Element	Operator Interactions
Request Management	Request ID Process (Server) State Client (Requestor) Priority	Edit Edit Display Edit Edit



Science Data Archive Workflow

Activity - Archive Log Analysis
Role - DAAC Ingest/Distribution
Technician
- DAAC Archive Manager

Data Server Storage Management





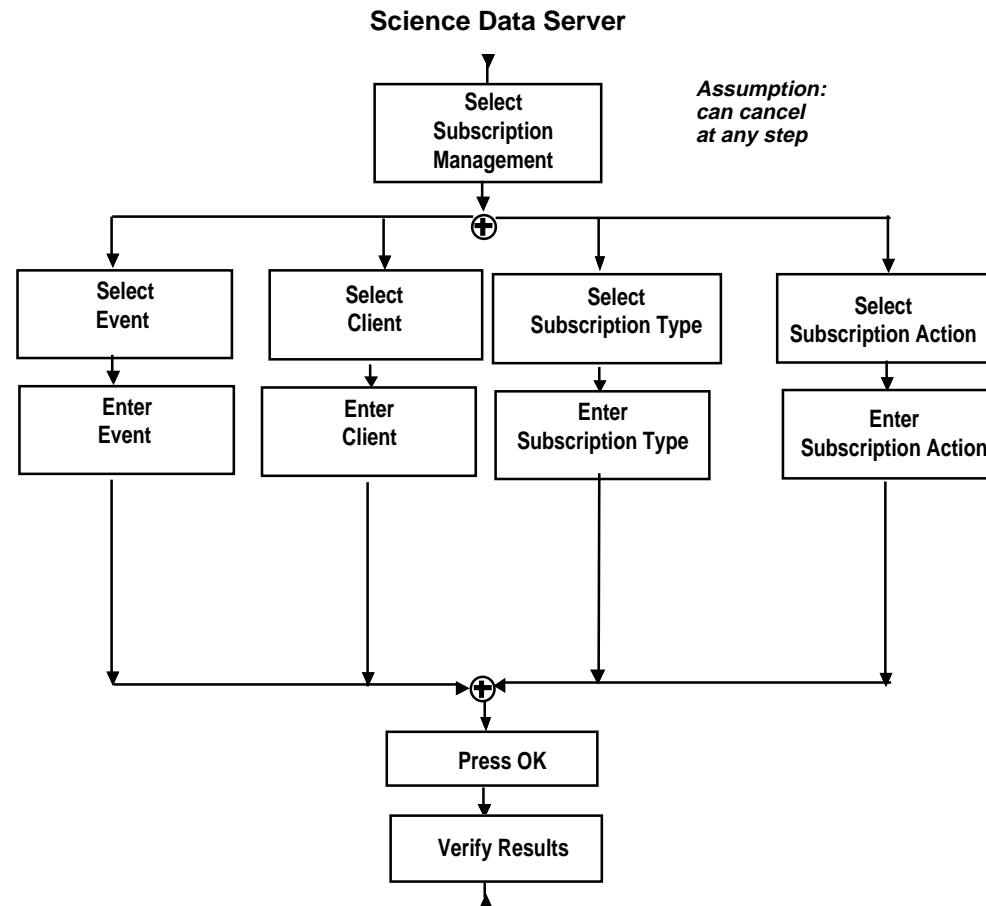
Science Data Archive - Data Activity

Archive Operator Function	Data Element	Operator Interactions
Resource Management	Archive Operations Errors Physical Inventories of Archive Media Archive Storage Devices Storage System Archive Media Safe-Stored Data at External Facility Archive Media Failures Archive Media Log	Display Input Display Display Display Display Input



Science Data Archive Workflow

Activity - Subscription Viewing
Role - DAAC Ingest/Distribution
Technician
- DAAC Archive Manager



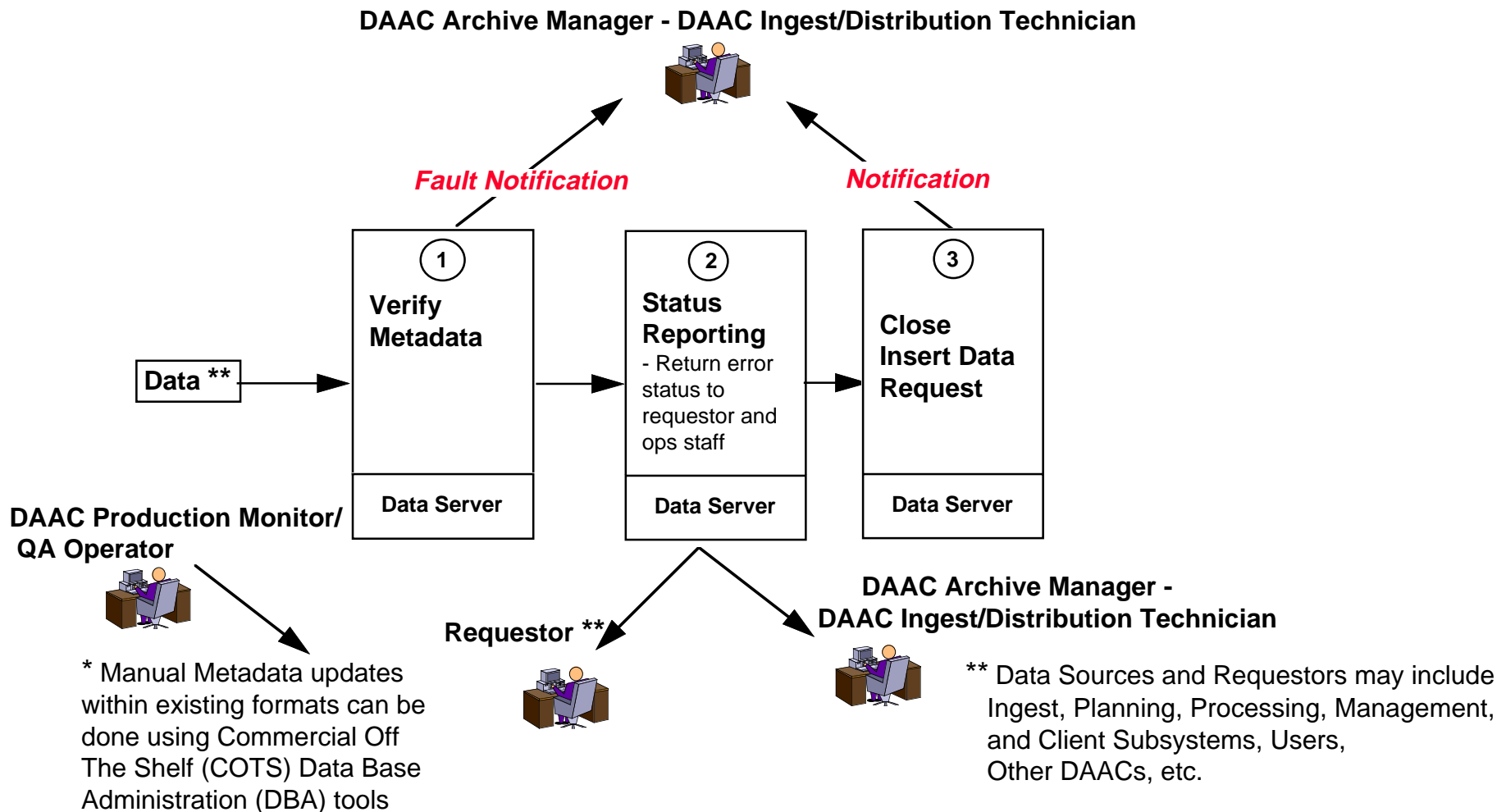


Science Data Archive - Data Activity

Archive Operator Function	Data Element	Operator Interactions
Subscription Management	Event ID Client Subscription Type Subscription Action	Input Input Input Input

Archive Data Insertion Metadata Validation Fault

Functional Flow



Archive Data Insertion Activities

Metadata Validation Fault

Points of View



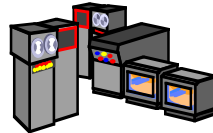
DAAC Ingest/Distribution
Technician



DAAC Operations View

Science Data Server GUI is used to get information about queued requests from a Science Data Server.

Examine alert and coordinate fixes.



ECS System

Science Data Server receives a Data Insert Request. Metadata Validation process finds errors. Validation failure results and a rejection message is entered in log, and sent to the DIT/DDT, DAM, and the requestor. The Data Insert Request is closed.

DAAC Archive Manager



DAAC Operation View

Review alert and associated status and faults.

SMC Resource Controller



SMC Operations View

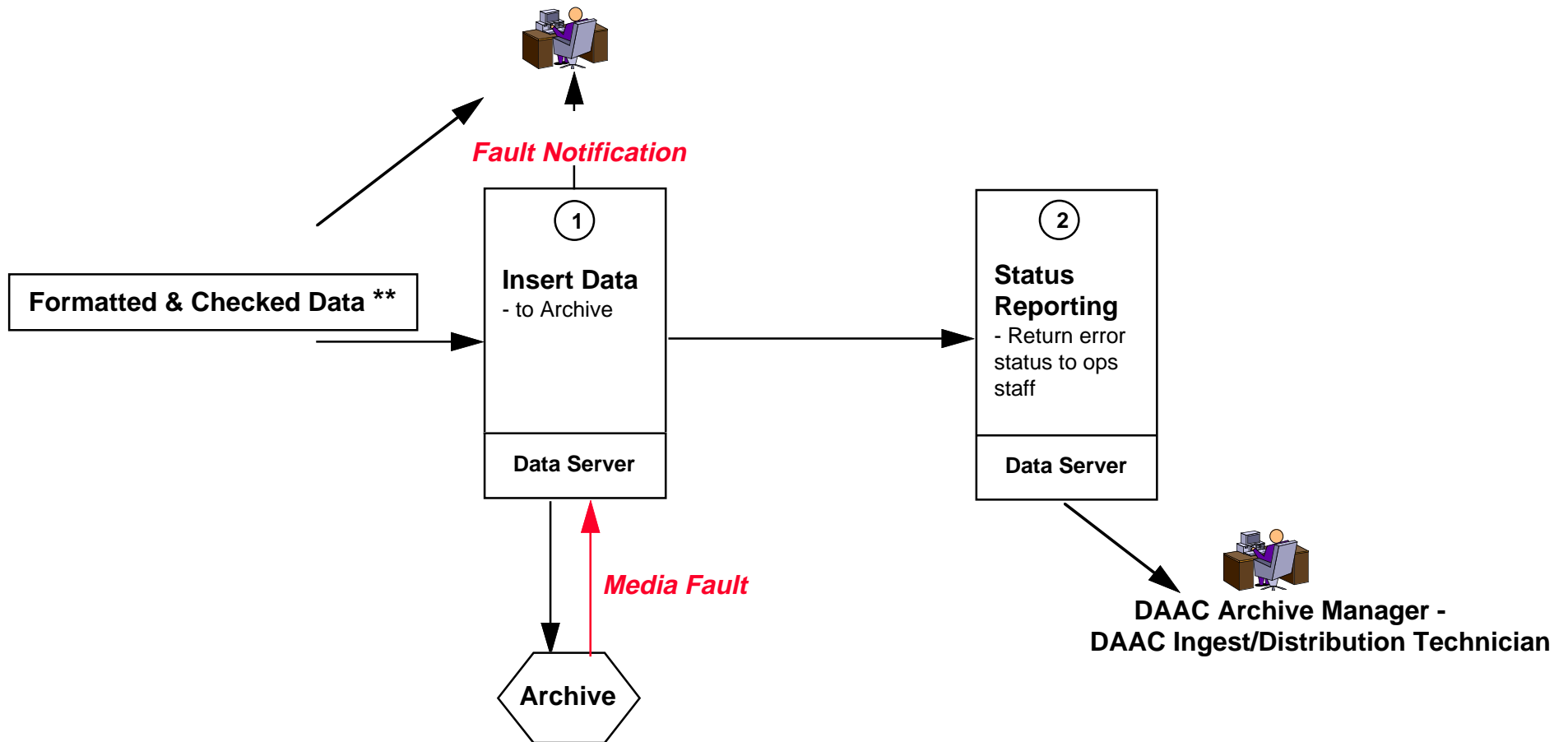
Monitors/reviews system-wide errors/faults for systematic trends and impacts

Archive Data Insertion Archive Storage Fault



Functional Flow

DAAC Archive Manager - DAAC Ingest/Distribution Technician



Archive Data Insertion Activities

Archive Storage Fault

Points of View



DAAC Ingest/Distribution
Technician



DAAC Operations View

Science Data Server GUI is used to get information about queued requests from a Science Data Server.

Examine alert and coordinate fixes.



ECS System

Science Data Server receives a Data Insert Request. Metadata Validation is successful. The Science Data Server sends a Data Storage Request to Storage Management. Storage Management reports a failure on a data insert. A fault message is entered in log, and sent to the DIT/DDT, DAM. Appropriate recovery action is taken.

DAAC Archive Manager



DAAC Operation View

Review alert and associated status and faults.

SMC Resource Controller



SMC Operations View

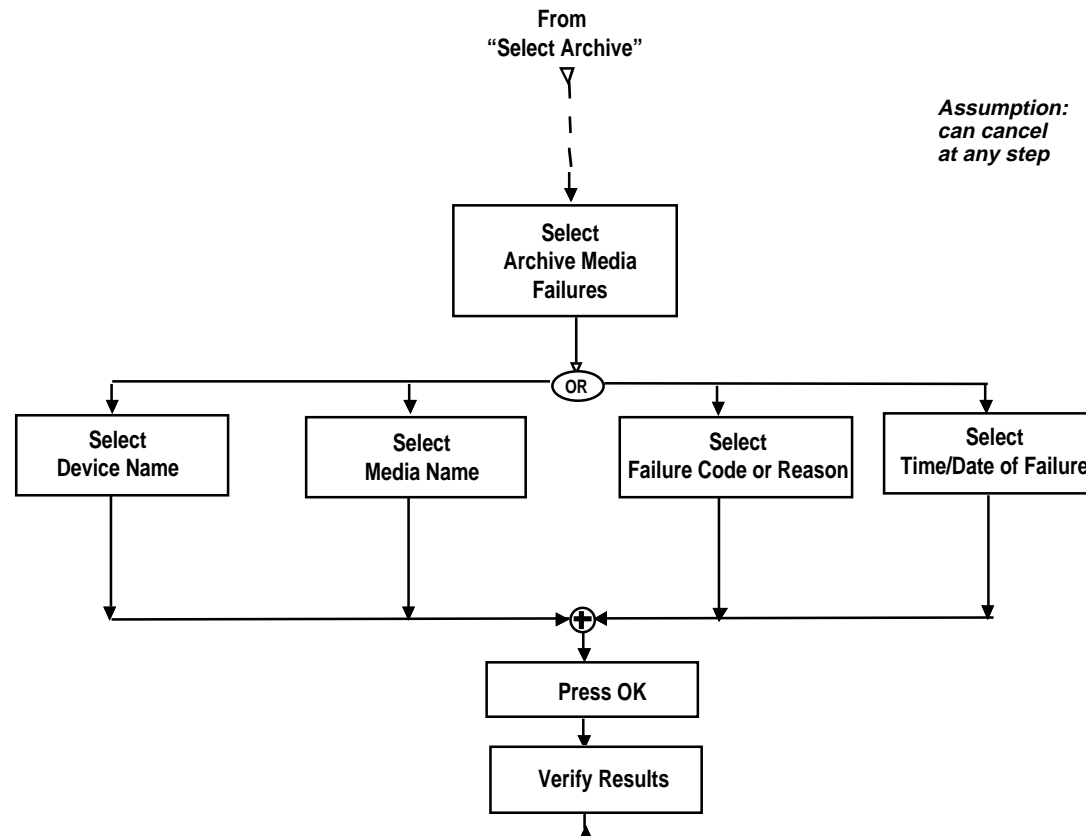
Monitors/reviews system-wide errors/faults for systematic trends and impacts



Science Data Archive Workflow

Activity - Archive Log Analysis
- Archive Storage Failure
Role - DAAC Ingest/Distribution
Technician
- DAAC Archive Manager

Data Server Storage Management





Science Data Archive - Data Activity

Archive Operator Function	Data Element	Operator Interactions
Resource Management	Archive Media Failures Device Name Media Name Failure Code or Reason Time /Date of Failure	Display Input Input Input Input